THE VETERINARY RECORD

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S., 1888.

No. 30. JULY 27, 1946 VOL. 58.

Diseases of Racing Greyhounds

by

H. KIRK, M.R.C.V.S.
(OF CLAPTON STADIUM)
in collaboration with
A. SAMS, M.R.C.V.S.
(OF WIMBLEDON STADIUM)

The important conditions commonly encountered in the racing greyhound are *lameness* arising from sprained shoulder and carpal joints, "knocked-up-toe," dislocated scaphoid of the hock, fracture of the hock and of the os calcis, sprain-fractures of the patella, phalangeal fractures, track leg in fore and hind legs, and cramp.

The *constitutional diseases* which predominate are distemper, Stuttgart disease, jaundice (simple and leptospiral), and hysteria.

The track veterinary official must always remember that he is dealing with animals often of great value and that it is highly important that his diagnosis shall be a correct one as so much of consequence depends upon it. He should therefore insist upon the aid of radiography in every case of possible doubt, where such would be of assistance.

The writer, with 19 years' experience of greyhound racing behind him, still finds many cases which clinically are undiagnosable and for which X-rays are imperative. Among these may be mentioned particularly the cases of phalangeal or other bone injuries which involve slight fracture with or without displacement of small bone particles, and often manifesting no crepitus; slight phalangeal luxations; the great fibrous enlargement of a phalangeal joint (knocked-up-toe) may conceal a fracture or dislocation; displaced scaphoid; the true condition of a fractured hock; the doubt whether fracture accompanies dislocation of the hip; etc., etc.

Insurance claims, decision to sell or retain a dog, put it to stud, or its future racing prospects, may all depend upon a well interpreted radiograph.

1. SPRAINED SHOULDER AND OTHER JOINTS. Sprains are inevitably commonplace and are treated as in all other dogs by the usual recognized methods. The essential, so far as the racing dog is concerned, is ample rest. Six to twelve weeks' complete rest may be needed, and the dog should not be allowed to gallop until all symptoms of lameness have been absent for a fortnight. Infra-red rays will greatly expedite healing. Unfortunately, sprains are very likely to recur and that is the reason for long rest and gradual resumption of work, making sure that the muscles which lost tone and condition during the healing period are again strong enough to resist stresses before being actually called upon to do so.

2. SPRAINS OF MUSCLE TISSUE. These may require many months to heal, and although in some cases nothing may be observable, yet the pain persists. The writer once sprained a muscle but did not regain full (unpainful) use of his arm for more than twelve months. A similar state of affairs may exist in the dog. [See "Track Leg."]

3. "KNOCKED-UP-TOE." This is a condition, almost exclusively confined to racing dogs, in which a digit becomes much enlarged at about the first or second interphalangeal joints. The swelling is hard and, in the early stages, hot and tender to the touch. It is a consequence of sprain and renders the dog sometimes so lame that one might justifiably suspect fracture or dislocation of the phalangeal bones. Nearly always, however, it starts as a synovitis and is followed by periarticular fibrositis, the resultant thickening being in most instances permanent. Lameness may depart after treatment and about a month's rest; but in too many instances it remains and necessitates amputation of part of the digit.

By rest is meant the non-use of the foot involved. Merely to stop the dog racing, but to allow it to run around the home paddock, is not rest. Nevertheless it is realized that exercise is really a necessity; therefore a padded tubular splint should be applied to the whole length of the limb, and should project an inch beyond the toe nails. Strain upon the injured toe would thus be removed, and the part would actually be rested. If carefully applied over a soft wool padding, Elastoplast might serve to immobilize the foot and toes, and so enable one to dispense with a splint. But experience shows that this kind of dressing often gets wet and ragged and soon comes away or is bitten off.

Topical treatment consists in painting the swelling daily with tincture of iodine until a mild blistering effect has been obtained. Thereafter, one may rub in iodex with the finger in an effort to decrease the fibrosis. Scott's ointment has also been found efficacious for this purpose.

Where lameness returns every time the dog is put to work, amputation of the phalanx is then indicated. Where an injury has been confined to a first or second joint, it has been found expedient in many cases to amputate at the terminal joint only, thus leaving the injured joint intact. Pressure and leverage are in this way removed from the digit and lameness is often cured. The advantage is that the gap between the remaining toes on either side of the injured one, is practically nil, and the speed of the dog is not as a rule interfered with. Ultra-violet and infra-red therapy are valuable in this condition if amputation is decided against.

In amputating toes, every endeavour must be made to retain the pad.

4. FRACTURED PHALANGES. It is, of course, possible to make fragments unite, but experience has often shown that there is a great saving of time if the fractured parts are removed. Much depends upon the nature and position of the break as ascertained by X-ray, and no definite rule can be laid down. Even if a fracture unites, there may be formed a callus which itself would cause lameness.

5. DISLOCATED PHALANGEAL JOINTS. Here it is best to reduce the dislocation, place wads of wool in the interdigital spaces, bind with a bandage or Elastoplast and limit exercise severely for three to four weeks. Radiograph again at the end of that time to ascertain the state of the joint, and if satisfactory remove the dressing and permit gradually increased exercise. If lameness still persists it may be better to amputate.

6. FRACTURED LONG BONES. Particular care must be taken, under general anaesthesia, that fractured bones are set in true alignment; and after the splint has been applied, a radiograph should be taken to ascertain whether the reduction is satisfactory. If it is, there is no reason why a dog should not race again within two months, and the writer has known many to do so without any loss of speed. On the other hand, fracture of inaccessible bones like the scapula, humerus and femur, may render it impossible adequately to set them. Union with displacement would then occur, and the dog's racing days would be over.

The use of anaesthetic is particularly stressed as only by this means can one fearlessly and adequately manipulate a painful lesion, and ensure the perfect stillness needed whilst a "Cellona" plaster cast is being built up. The practitioner who is not familiar with the use of "Cellona" is well advised to study its mode of application, as unless properly done and all details followed, it is apt to prove a complete failure. Correctly applied, it can be a complete success.

7. DISLOCATED SCAPHOID. A ruptured interosseous ligament permits the scaphoid to extrude, anteriorly, where sometimes it may be felt by digital examination. In some cases, however, owing to swelling and other causes one cannot detect this bone. True diagnosis is then established only by radiography. If possible the bone should be pressed back into position under anaesthesia and once reduced, the joint should be immobilized by a plaster cast. This must start from the foot and continue for two inches above the head of the calcis. The plaster around the foot must be protected from becoming wet by applying a thin layer of oiled silk or rubber sheeting. Unless there is great strength in this cast, there will develop some movement in the hock joint which would defeat one's object.

The joint should be entirely immobilized for a month, and thereafter only the most gentle exercise permitted and certainly no jumping—even on or off a raised bed. Sometimes as long a rest as six months may be expedient for complete cure, but even then the dog might have to be reduced to a lower grade.

8. FRACTURE OF THE HOCK. This is always a serious matter though the prognosis must depend upon the situation and extent of the fracture. Many such cases have entirely responded to

correct treatment, though not a few have become racing failures.

Setting in plaster must be performed at once and adequate time (three to four weeks) allowed for repair. Frequent inspection of the condition of the cast, etc., should take place.

9. Fracture of the Os Calcis. This is one of the most serious fractures which can befall a racing greyhound, so far as future racing prospects or the application of remedial measures are concerned. It usually happens in consequence of the inordinate pull exerted upon the tuber calcis of the gastrocnemius muscle through the tendo Achillis.

It is the continued tension of this tendon which makes it so difficult, or impossible, to immobilize and retain the two broken portions of the bone in a straight line. In most cases, when union has eventually occurred, the head of the calcis is seen to have assumed a permanent direction forward, *i.e.*, towards the tibial shaft. Under anaesthesia the parts must be forcibly manipulated into a straight line, and with the hock joint fully extended, an assistant carefully maintains the fractured portions of bone in correct and normal position whilst the plaster cast is being moulded about them. The plaster cast should extend well above the hock in one direction, and reach the foot in the other.

Slabs of six thicknesses will be required for this operation in order to resist the great muscular tension which is bound to be exerted in this part of the anatomy.

Wiring has been performed but has not given the consistently good results expected of it.

10. Patellar Injuries. Several types of patellar injury have been discovered by means of radiography in racing greyhounds. Sometimes the upper portion of the bone is torn away by the tendon of the rectus femoris; at other times the union of the straight patellar ligament with the patella bone becomes severed; or the bone may break in half. Most cases are due to internal violence; some to impact with the rails, etc.

The stifle should be extended and a cast applied for three to four weeks.

11. "Track Leg." In racing greyhounds the triceps muscle seems to be very liable to sprain and very soon after such an occurrence, a swelling occurs and progressively increases (sometimes to the size of a small hen's egg) about halfway up the posterior border of the infra-spinatus muscle. More commonly a swelling may be encountered on the inner aspect of the upper third of the tibia. This is due to sprain of the tendon of the semi-tendinosus muscle. Less frequently the dog sustains a "low" "track leg," the swelling appearing on the inner aspect of the tibia some two to three inches above the hock, due to sprain of the tendon of the sartorius muscle. The swelling may at first contain serum but later there is generally a fibrous hardening of the lesion and lameness persists, often for many weeks.

If great fluctuation indicates that a considerable amount of fluid has collected, this may be aspirated with a hypodermic needle and syringe. Pressure is then applied by bandage for a few days, after which hand massage is commenced. One may apply a mild blister (at the same time keeping a box muzzle on the dog), or Scott's dressing (ung. hydrarg. co.) may be well rubbed in daily for about two weeks, and the dog should be rested completely for ten to twelve weeks. The prognosis is favourable provided that ample time is allowed for recovery and a return to work is very gradual.

12. Cramp. There are several possible causes, but the one which probably operates most frequently is genuine fatigue due to insufficient regular and progressive exercise. When the condition occurs indiscriminately in a number of dogs all trained by the same man (as the writer has seen it do) it points to inefficient training in probably every respect—including dietary.

If one dog cramps up every time it runs the indication is one of cardiac insufficiency, and the only time to auscultate for that is when the dog is at complete rest, with no distractions or excitement.

There are, of course, many greyhounds which, as a result of distemper or for some other reason, have myocardial or valvular deficiencies and no one can expect excessive strain to be borne by a weak heart.

These causes suggest the remedies; otherwise a full dose of glucose with vitamin B_1 given before racing would possibly avert an attack.

13. Distemper. The average veterinary surgeon needs no further instruction concerning this scourge. One may perhaps urge the very early use of specific serum in all suspected cases. Thirty shillingsworth of serum is not expensive when the dog's value is considered. In all respiratory affections full use should be made of the sulphonamides (particularly sulphapyridine) in adequate dosage.

Serious outbreaks of distemper in old-established kennels are continually occurring through the importation of greyhound saplings from Ireland which almost invariably are in the stage of incubation on arrival. The time seems to have arrived when the N.G.R.C. might veto the admission of any dogs from Ireland which have not been properly immunized, and which are not accompanied by a certificate to that effect.

14. Stuttgart Disease. This arises and is treated in much the same way as occurs in other breeds of dog. Track veterinary surgeons must familiarize themselves with the very early symptoms, in order that by early diagnosis, curative measures may be promptly applied. The writer has had considerable success with Coagulen (Ciba).

15. Jaundice. It is with regret one has to admit that there is apparently nothing upon which we can rely as a cure for jaundice. The writer has nothing new to suggest which is likely to be of value.

16. Leptospiral Jaundice. This specific disease is amenable to treatment by the specific anti-serum, provided this is applied within the first three to four days, and the earlier the better. When icterus has set in, the use of serum is usually too late.

Urine and blood samples should be taken daily for diagnostic purposes in a suspected case, until a diagnosis is established.

17. Hysteria. The writer believes this malady to arise through an alimentary toxin (either ingested or generated *in vivo*) which attacks the central nervous system. There is evidence leading to the belief that a parasite of wheat (*Tilletia tritici*) when swallowed, will set up hysterical convulsions, and the treatment recommended is a sharp purgative followed by a couple of days' course on some intestinal antiseptic such as T.C.P. in water (1 in 60 b.i.d.), and a complete change of the source of the food. This does not mean that biscuit or meat or bread, etc., shall not be fed, but that their source should be changed. This follows the belief that one consignment or one sack of flour may contain the toxin whilst another one would not. Therefore one brand of biscuit should be discarded (temporarily) for some other maker's product; the bread of one baker should be changed for that of another, etc.

The National Greyhound Racing Society issued a very full description of the cause and treatment of hysteria, to all Racing Managers, at the end of 1945. This was written by a veterinary official and is available for every track veterinary surgeon to read who cares to apply to his Company's Racing Manager.

REVIEW

[Meat Inspection in the Belgian Congo. By L. Tobback, Dr. Med. Vet. (Attached to the Ministry of Colonies). Pp. 85. Price 15 francs. Brussels: A. Biernaerdt, 41, Rue des Coteaux. (1946.)]

This booklet is intended to provide a useful guide to lay inspectors of meat in the Belgian Congo. Whilst the veterinary surgeon is recognized as the expert on meat inspection, it is not always possible to obtain the services of such an expert, and the law of February 13th, 1935, in the Congo lays down that failing a veterinary surgeon, then all medical men, and persons qualified by examination, as well as men considered capable of exercising the function of meat inspectors, shall be empowered to carry out those duties.

Dr. Tobback has condensed the elementary points into this book, so as to provide a guide to non-veterinary meat inspectors. The paper-covered volume contains about nine drawings illustrating the positions of the lymph glands, sex differences, and points of difference in certain of the offal of the horse, ox, sheep, pig and the dog. The literature deals briefly with the live animal, rapid, and painless slaughter, including electric methods, and the appearance of meat in the healthy and diseased carcase. There is a chapter devoted to putrefaction in meat, which is particularly good. Diseases are dealt with in an elementary manner, together with advice as to total or partial seizure by the inspector. A short chapter deals with "Freibank" sterilization of meat, and an appendix gives a useful summary of the principal anatomical differences between equine and bovine organs and joints, as well as the Belgian meat regulations.

The booklet is clear, concise and can be well recommended to all interested in meat inspection in African colonies. It is a brochure which illustrates the importance of having publications of this kind written by an expert in veterinary medicine.

Phenanthridinium Compound 1553 in the Treatment of T. congolense Infection in Grade Cattle

S. F. BARNETT, B.SC. (LOND.), M.R.C.V.S.,
STORMONT, BELFAST

The use of phenanthridinium compound 1553 in zebu cattle has been described by Carmichael & Bell (1944) and Bell (1945), but as there is no record of its use in cross-bred Zebu-European cattle or "grades," the following short experiment may be of interest.

Infection and Method of Treatment

The animals used were six grade steers about two and a half years of age.

The strain of *T. congolense* was obtained from a natural field case, inoculated into a rabbit, and then to bovine 7213 at the laboratory. Blood from bovine 7213 was inoculated into the steers, each animal receiving about 800,000 trypanosomes subcutaneously.

The incubation period was five to nine days, and the infection ran an acute course. Daily examination of blood smears showed very numerous trypanosomes in all the animals, and a weekly red cell count showed a progressive fall in red cell numbers. Six weeks after inoculation the red cell count had fallen to a dangerously low level and treatment was instigated.

The drug was known to be readily soluble up to 2 per cent. concentration, but a preliminary inoculation into two grade animals, using a 2 per cent. solution, had shown that it was very irritant, producing thrombosis and swelling when given intravenously and marked swelling when given subcutaneously. As the amount of drug to be given to these relatively small cattle was very little it was decided to use a 0·5 per cent. solution; which would not be very bulky and might reduce its irritant effect.

Following administration thick drop blood smears were examined daily for the presence of trypanosomes. Forty-eight hours after treatment, trypanosomes were still present in the blood of four of the animals, but all were negative at 72 hours. The drug is therefore fairly slow acting when given by the subcutaneous or intramuscular routes. The results of the treatment are given in the following table.

Animal Number	Weight in kg.	Dose mg./kg.	Dose c.c. of 0·5% solution	Red cell count at time of inoculation	Route of inoculation	Result
				Million		
7,407	100	0·30	6·0	4·2	Subcutaneous	Relapsed after 21 days
7,438	120	0·50	12·0	4·6	„	„ „ 27 „
7,435	116	0·75	17·5	3·4	Intramuscular	„ „ 31 „
7,410	115	1·0	23·0	3·6	„	„ „ 33 „
7,408	106	1·25	27·0	2·6	„	Cured after 122 „
7,409	107	1·5	32·5	2·0	„	„ „ 122 „

The gradual increase in the time taken to relapse as the curative dose is approached has been noted in other experiments.

Re-treatment of the Relapsed Cases with Larger Doses of the Drug

The four animals which relapsed to the smaller doses of phenanthridinium 1553 were re-treated about five weeks later with the same drug at the rate of 2·0 mg./kg.

Two animals were treated with a 2 per cent. solution subcutaneously and two with a 2 per cent. solution intramuscularly. Daily examination of thick drop blood smears for 190 days after treatment were negative in all four animals, and as the animals were gaining in weight and healthy in all respects, they were regarded as cured. The tissue reaction to the second administration of the drug was somewhat less than after the original dose. It seems likely that this drug does not establish a drug fast strain after relapse.

Local Reactions Produced by Administration of the Drug

(1) *Subcutaneous Injection.*—The drug was inoculated behind the shoulder, high up on the ribs. The day after inoculation there was a diffuse oedematous swelling extending over the whole rib area and down to the sternum. There was some heat present but no apparent pain or discomfort. The swelling was about an inch in depth at the site of inoculation, becoming gradually more shallow towards the periphery. The affected area gradually became harder and reduced in size, and the hair fell out in the centre, and after three to four weeks the skin flaked off, leaving new bare epithelium underneath.

(2) *Intramuscular Injection.*—The drug was inoculated deep into the posterior part of the gluteal muscles. After 24 hours the animals were all very lame and the muscles round the site were swollen and hard. Some heat was present at first, but subsided after two days. The hard swelling and lameness persisted for five weeks, after which no lameness was detectable but the swelling was still palpable after ten weeks.

As these reactions appeared to be rather more severe than those described by Carmichael & Bell, six normal grade animals were inoculated with a 2 per cent. solution at the rate of 2 mg./kg. to confirm the above results.

(1) *Intravenous Injection.*—A small hard swelling developed in the vein of two animals 18 hours after administration, with oedema of the surrounding tissues. By 48 hours there was a hard painful swelling about the size of a fist, and there was a firm clot in the vein extending for 3 inches beyond the swelling towards the head. The swelling became harder but did not increase in size after 72 hours. The thrombosis and local swelling were still present six weeks after inoculation.

Although one of the anima's jumped during the inoculation and it is possible that some of the fluid escaped into the perivenous tissues, great care was taken during the inoculation to prevent this, and from the nature of the reaction it seemed likely that the solution produced a thrombosis by its irritant action within the vessel, and not by perivenous irritation.

(2) *Intramuscular Injection.*—Two animals were inoculated into the gluteal muscles. Twenty-four hours later there was marked heat, swelling and pain at the site. The swelling continued to increase for 72 hours, extending 4 to 5 inches above and below the site, and about 3 inches on either side of it. The animals were markedly lame for four days and slight lameness was still apparent four weeks afterwards. The muscle became very hard for about 3 inches round the site, and this reaction was still palpable eight weeks after injection.

(3) *Subcutaneous Injection.*—Swellings of the same nature as those occurring with the 0·5 per cent. solution were encountered. There was rather more oedema, and the fluid gravitation resulted in the lower borders of the swelling above the sternum being thicker than the rest of the lesion. There was no pain or discomfort and the swelling gradually decreased in size and became hard and fibrous. There was some loss of hair and flaking of the skin for several inches round the site, but no slough resulted.

Summary and Discussion

In a small series of six animals the minimal curative dose of phenanthridinium 1553 was 1·25 mg./kg. when given intramuscularly.

Four animals which relapsed were cured by a second dose of 2 mg./kg.

The solution is very irritant and the subcutaneous route would appear to be the only practical one, although under field conditions where aseptic conditions are impossible, secondary infection or other complications might follow the administration of this drug in grade cattle.

References

CARMICHAEL, J., & BELL, F. R. (1944.) *Vet. Rec.* **56.** 495.
BELL, F. R. (1945.) *Ibid.* **57.** 449.

[This work was done at the Veterinary Research Laboratory, Kabete, under the Director Mr. R. Daubney, C.M.G., O.B.E.]

DR. WIGHT'S RETIREMENT FROM THE BUREAU OF ANIMAL INDUSTRY

Having attained the age of 70, Dr. Alexander E. Wight, Principal Veterinarian in Charge, Tuberculosis Eradication Division, Bureau of Animal Industry, Agricultural Research Administration, U.S. Department of Agriculture, has retired after continuous service in the Bureau for more than 47 years. When the tuberculosis eradication project was undertaken by the Bureau in 1918 Dr. Wight was made Assistant Chief of the Division and succeeded Dr. Kiernan on the death of the latter (December 13th, 1927) to become chief of the Division, which position he has held for the past 18 years. At the time the project came under the direction of Dr. Wight only one state, North Carolina, was wholly within the modified accredited area. Dr. Wight at different times was president of the U.S. Livestock Sanitary Association, the District of Columbia Veterinary Medical Association and the A.V.M.A.

CLINICAL COMMUNICATION

Penicillin in the Treatment of Mastitis

G. J. H. MOON, M.R.C.V.S.

Ryde, Isle of Wight

The calcium salt of penicillin was used in the form of 10,000 unit tablets which were dissolved in sterile distilled water immediately before use. Latterly boiled tap water has been used with equal results.

A 50 c.c. Record syringe with one and a half inch siphons were used for the infusions, the apparatus being sterilized by boiling. Affected quarters were first stripped, the teat cleaned with surgical spirit and then with sterile water. Infusions of 50 to 100 c.c. were employed, the solution being left in the quarter from ten to 16 hours.

Streptococcal Mastitis.—Owing to the cost of bacteriological examination samples were not usually tested for sensitivity and infusions were made following clinical diagnosis.

Infusions of 10,000 to 30,000 units in 50 to 100 c.c. of sterile water were used and repeated in 24 to 48 hours with a third and fourth infusion if required.

In a large number of cases a *clinical* cure was observed after two infusions, resistant cases being encountered when the disease was long standing. In dry cows the majority of cases gave apparently normal secretions following a single infusion of 30,000 units in 100 c.c. of water which was not stripped out. Severe and chronic cases in dry cows were given three infusions at 48-hour intervals and indurations frequently disappeared.

In one herd in which a large number of cows was affected with *Str. agalactiae* mastitis, results were remarkable when penicillin was first used, cases appearing to be cured after one or two infusions of 20,000 units; the disease was thought to be almost stamped out in the herd, but later cases, although clinically mild, were completely resistant to treatment with sulphanilamide and required up to four infusions with 30,000 units to affect a cure. It is obvious that samples should have been tested bacteriologically for sterility following treatment of the earlier cases, whereas the Whiteside test was relied on and resistant strains of *Str. agalactiae* were developed.

Staphylococcal Mastitis.—Infusions were made following clinical diagnosis and a sample taken for plating out to test the penicillin sensitivity. All the cases listed were found to be caused by penicillin sensitive *Staph. aureus.*

The majority of cases infused in the early stages of an attack responded to treatment, case No. 5 being an exception. This occurred on the same farm as case No. 4 and, although attended within a few hours of onset, the conditions grew progressively worse although a sample plated out proved to be sterile.

Case No.	No. of lact.	Day attended	Temperature °F.	Appearance of quarter	Secretion	Treatment Units	Water c.c.
1	3rd	2nd	104·5	2 qtrs. hard; painful	straw-coloured; clots	40,000	50
		4th	104·5	hard	more opaque	40,000	50
		6th	102·0	softer	milk; yellow clots	20,000	50
		8th	101·4	almost normal	clinically normal	no sample tested	
2	1st	1st	105·0	swollen	yellow; clots	40,000	50
		3rd	102·6	„	clinically normal	40,000	50
		5th	101·6	slight swelling	normal	sample sterile	
3	1st	2nd	104·8	swollen	blood-stained; clots	30,000	50
		3rd	104·2	„	more opaque; blood	30,000	50
		5th	102·6	softer	milk; clots	30,000	50
		7th	101·4	slight swelling	normal	sample sterile	
4	9th	2nd	106·0	very swollen, painful	straw-coloured; clots	40,000	50
		3rd	104·8	„ „	thicker; straw-coloured; clots	40,000	50
		5th	105·0	„ „	„ „	40,000	50
		7th	105·4	harder; more swollen	thick; large clots	considered hopeless. sample only	*B. coli*
5	6th	1st	105·4	swollen; painful	brown; milky	60,000	100
		2nd	104·8	„ „	thicker; clots	60,000 & 10 c.c. toxoid	100 staph.
		4th	105·2	harder	„ large clots	60,000 & 20 c.c. toxoid	100 staph.
		6th	103·4	very hard; less pain	very thick	considered hopeless. *sample sterile*	
6	2nd	1st	106·0	swollen; pain	blood-stained; clots	40,000	50
		3rd	102·0	slightly swollen	milk; yellow clots	40,000	50
		5th	101·6	very slight swelling	milk; clinically normal	40,000	50
		7th	101·5	normal	normal	sample sterile	
7	3rd	3rd	105·8	2 qtrs. very hard; painful	thick; clotty	60,000 each qtr.	100
	4th	4th	105·8	harder	„ „	60,000 each qtr.	100
		6th	105·4	harder; more painful	„ stringy clots	considered hopeless sample-pen.sens. *Staph. aureus*	
8	7th	3rd	105·0	very hard	clear straw-coloured with yellow clots	50,000	50
		5th	102·6	„	thicker; more opaque	50,000	50
		7th	101·8	still hard	milky with clots	40,000	50
		9th	101·4	softer	clinically normal; much reduced in quantity	sample sterile	
9	3rd	1st	105·2	swollen, pain	clear straw-coloured (cow drying off)	60,000	100
		2nd	101·8	slight swelling	almost normal; few clots	40,000	100
		3rd	101·6	normal	normal	sample sterile	
10	2nd	1st	104·2	slightly swollen	brownish; yellow clots	40,000	100
		2nd	101·5	almost normal	clinically normal	40,000	50
11	8th	2nd	104·8	hard; pain	yellowish; thick; clotty	50,000	50
		4th	105·0	„ „	yellowish; thicker	60,000	100
		6th	104·6	harder	thicker	60,000	100
		8th	104·8	„	thick; smaller quantity	considered hopeless no infusion given	
		17th	101·6	enlarged; softer	small amount *normal milk*	sample sterile	
12	1st	1st	104·6	swollen, pain	milky; yellow clots	40,000	100
		2nd	103·8	„ „	clinically normal	30,000	50
		4th	101·6	almost normal	normal	samp.—pen. sens. *Staph. aureus* sample sterile	
13	3rd	1st	104·2	swollen	yellow, clotty	50,000	100
		2nd	102·4	„	milk; few clots	30,000	50
		3rd	101·8	softer	clinically normal	30,000	50
		5th	101·4	normal	normal	sample sterile	
14	4th	3rd	104·4	very hard	clear yellow; clots	50,000 & 10 c.c. staph. toxoid	100
		4th	104·6	„	thicker	50,000	100
		5th	105·2	harder	thick stringy clots	50,000 & 20 c.c. staph. toxoid	50
		7th	103·2	„	„ „	50,000	50
		9th	104·2	„	„ „	considered hopeless sample.—pen. sens. *St. aureus*	
15	2nd	1st	104·0	swollen; painful	milk with yellow clots	40,000	100
		3rd	101·8	less swollen	clinically normal	30,000 sample — pen. sens. *St. aureus*	50
		5th	101·5	almost normal	normal	sample sterile	
16	6th	2nd	104·2	swollen	thick, clotty	50,000	100
		3rd	104·6	harder	thicker; whiter	50,000	100
		5th	102·4	hard	milky; few clots	40,000	50
		7th	101·8	softer	clinically normal; very reduced quantity	40,000	50
		9th	101·5	less swollen	normal; very small amount	sample sterile	
17	5th	3rd	104·6	very hard	straw-coloured; clots	60,000	100
		4th	104·6	„	thicker	60,000 & 10 c.c. St. toxoid	100
		6th	105·0	harder	„	60,000 & 20 c.c. St. toxoid	50
		8th	105·2	more painful	very stringy	considered hopeless sample — pen. sens. *St. aureus*	

PENICILLIN

Guidance for use in Veterinary Medicine

[The following note is published with the concurrence of the Ministry of Supply, the Ministry of Agriculture and the Agricultural Research Council. It has been prepared especially for the information of veterinary surgeons, whereas the note included in the packs of penicillin which will be supplied to them was prepared primarily for doctors and dentists.

The arrangement made between the Ministry's Veterinary Laboratory and some veterinary surgeons for the carrying out of trials with penicillin will continue. Practitioners who have entered into that arrangement with the Veterinary Laboratory will not, of course, be precluded from obtaining further supplies of penicillin in the way that is now open to all veterinary surgeons.]

Penicillin is prepared by artificial cultivation of the mould *Penicillium notatum*: as its preparation is costly it is essential that penicillin should be used only for the treatment of disease conditions in animals which are likely to respond to its use. Further, the effective use of penicillin can be expected only if its somewhat unusual properties are well understood.

Penicillin is issued for clinical use in the form of freeze dried sodium salt (in the form of powder) in containers of 100,000, 200,000, 500,000 or 1,000,000 International units. The International unit is approximately equal to the Oxford unit.

Special Properties of Penicillin

Stability

1. Penicillin is rapidly destroyed by acids and alkalis. It is most stable between *p*H5 and *p*H7. The stability of different preparations of penicillin in solution varies.

2. It loses activity when heated above body temperature and is rapidly destroyed by boiling; therefore it cannot be sterilized by boiling or autoclaving.

3. It is destroyed by the enzymes of many common bacteria such as air bacteria and *E. coli*: if these bacteria contaminate a solution it will quickly lose potency, so water or saline used for making the solution and the bottles, etc., to contain it must be sterilized before use.

4. It is destroyed by the heavy metals (*e.g.*, copper, mercury, lead), by alcohols (*e.g.*, methylated spirit and absolute alcohol) and by oxidizing agents (*e.g.*, hydrogen peroxide and potassium permanganate): hence dressings containing such materials should not be used when penicillin treatment is adopted.

Solubility, Absorption and Excretion

1. Penicillin is freely soluble in water and diffuses readily.

2. It is quickly absorbed after subcutaneous or intramuscular injection and is at its maximum concentration in the blood within 15 minutes of such injections. By intravenous injection it reaches all parts of the body within a few minutes.

3. It has been found that penicillin does not readily pass the pleura and the serous membranes of joints: hence for the treatment of infections of these cavities penicillin should be used by direct injection into the cavity.

4. Though absorbed from the intestine, simple penicillin solutions should not be given by mouth as the penicillin is largely destroyed by the acid in the stomach. Neither should they be given by rectum as the penicillin is destroyed by the bacteria of the faeces.

5. It is concentrated by the kidneys and excreted rapidly in the urine. Excretion begins within a few minutes of administration by any route.

Anti-bacterial Action

1. Penicillin in the concentrations used clinically has a much stronger bacteriostatic than bactericidal action. An anti-bacterial concentration must be maintained until the bacteria have been disposed of by leucocytes and other body defences. This usually requires a period of some days. In treating diseases in which bacteria are present in the blood it is important to ensure that a bacteriostatic concentration is maintained for a considerable time and so to prevent the multiplication of any living bacteria present with the chance of a recrudescence of the infection.

2. Unlike the sulphonamides, penicillin is not inhibited by serum or pus, so that it is effective in frankly septic conditions.

3. Dead tissue such as a sequestrum or large slough will harbour bacteria out of reach of the drug. Such tissue should be removed at the beginning of treatment or in any case as early as possible. The use of penicillin is not a substitute for ordinary surgical measures.

Indications for the Use of Penicillin

1. It has been found that in human medicine the chief organisms susceptible to penicillin are:—

Actinomyces (most pathogenic strains).
C. diphtheriae.
Clostridia of gas gangrene.
E. anthracis.
Gonococcus.
Meningococcus.
Pneumococcus.
Staphylococcus albus and *aureus.*
Streptococcus pyogenes.
Streptococcus viridans (most pathogenic strains).
Spirochaetes of syphilis, relapsing fever and Vincent's angina: possibly of Weil's disease (leptospirosis).

2. The common pathogenic organisms of man which are insusceptible are:—

E. coli.
Mycom. tuberculosis.
Proteus.
Ps. pyocyanea.
Strept. faecalis.
Occasional strains of *staphylococcus* and of *streptococcus*, the *acne bacillus* and almost all viruses.

3. Any disease caused by susceptible bacteria would appear to be suitable for treatment with penicillin.

Where a mixed infection composed of sensitive and insensitive organisms, occurs, *e.g.*, in wounds, considerable benefit often follows elimination of the susceptible organism following penicillin treatment although the insusceptible organism remains.

Specific antitoxin therapy in established infections caused by susceptible bacteria may be indicated in addition to penicillin which has no significant antitoxin action.

4. In the diseases of animals attention has been given largely to the use of penicillin in the treatment of mastitis. It has been shown that *Streptococcus agalactiae* is susceptible to penicillin and that its injection into affected quarters in appropriate amounts produces a bacteriological cure, with a minimum amount of udder disturbance. The results of recent trials indicate that the injection of 20,000 units of penicillin into each affected quarter on two occasions at daily intervals produces bacteriological cures in over 80 per cent. of infected quarters. A single injection even of a large amount of penicillin, however, did not yield satisfactory results.

The effect of penicillin on staphylococci associated with mastitis appears to be variable.

Directions for Use

Handling the Drug

Penicillin must not be exposed to heat, acid, alkali or certain chemicals and bacterial contamination must be avoided. Water or saline used in making solutions must be sterile and clean; sterile vessels must be used in dispensing.

Powders, especialy of the sodium salt, are hygroscopic and when damp lose activity rapidly; tubes and bottles containing them should be kept closed and air-tight.

All preparations, and particularly solutions, lose activity more rapidly when warm. Penicillin powder can be stored satisfactorily for 12 months under cool, dry conditions at a temperature not exceeding 15° C.

Solutions for injection should be used within 48 hours of preparation and while awaiting use should be stored at a temperature of from 1° C. to 4° C. It is advisable, however, to use solutions as soon as possible after they are made up. Aqueous preparations such as creams should also be similarly stored and used as soon as possible.

Methods of Administration

Intramuscular and Subcutaneous Injection

A convenient concentration for injection is 5,000 to 10,000 units in each cubic centimetre and is made by adding to the powder the appropriate amount of sterile water and by keeping the vessel agitated until solution is completed. In the treatment of animals, penicillin has not been used to any great extent by injection methods. It is essential, however, when such methods are used to ensure that a bacteriostatic concentration in the blood is maintained. It has been shown that in the human being 15,000 units injected every three hours will maintain a satisfactory concentration; there is little evidence of the amounts necessary in animals. The relative weights

of the animal and the human being may be a guide. It has been shown that very large amounts injected subcutaneously or intramuscularly are tolerated without any systemic disturbance.

LOCAL APPLICATION

The principle involved in local treatment is to hold the drug in contact with the infected tissues for as long as possible; thus irrigation of an open wound is ineffective as well as wasteful. Solutions in sterile water or saline of 250 units or more per c.c. may be injected into wounds after suturing or into abscess cavities after aspiration of the pus.

Penicillin powder can be made into a cream of 250 units or more by preparing a sterile solution and incorporating in a sterile base.

Sterile solution of penicillin may be injected into the pleural and joint cavities after aspiration; large amounts should be used. Injections once daily are effective in these cavities as the penicillin is retained for some time.

For eye infections drops of 500 to 2,000 units per c.c. applied every few hours may be used.

UDDER INJECTIONS

In the treatment of bovine mastitis associated with *Streptococcus agalactiae* infection, the injection of 20,000 units of penicillin into each affected quarter on two occasions at daily intervals has been shown to effect bacteriological cures in about 80 per cent. of treated quarters. The drug is injected as a solution in sterile water: the amount of fluid injected does not appear to influence the treatment but it is usual to use 50 c.c. per quarter.

In carrying out these injections it is essential that the greatest care be exercised to ensure that the equipment is sterile and to prevent the transference of any infection from animal to animal or from quarter to quarter.

Note

Except in the treatment of bovine mastitis, especially the type associated with *Streptococcus agalactiae*, the use of penicillin in animals has been extremely limited and few observations have been made. Concerning other diseases and conditions little or no accurate knowledge exists as to dosage or frequency of treatment. So far as can be ascertained animals can tolerate large amounts of penicillin without the occurrence of any undue systemic disturbance.

ANIMAL INFECTIONS OF STREPTOCOCCIC ORIGIN AND POSSIBILITY OF THEIR TRANSMISSION TO MAN

Strangles of horses (*Str. equi*) and mastitis of cows (*Str. agalactiae*) are the most important streptococcic affections in domestic animals.• Lancefield after careful study of serology and biological characters of these streptococci divides them into three groups: human streptococci belong to the group A, *Str. agalactiae* to group B, and *Str. equi* to group C. In spite of this classification, there is no doubt that streptococci of horses may infect men, and this happens sometimes to veterinarians. *Str. agalactiae* is regarded as the responsible factor of some human epidemics caused by infected milk. Epidemics of this kind, sometimes serious, have been observed in the United States and Scandinavia. The chief symptom is an inflammation of the throat and adnexa, which may be followed by various complications. Bacteriological examination showed the presence of streptococci not identical to *Str. agalactiae* but with the characters of the haemolytic streptococcus of scarlet fever. Therefore, one is induced to think that such epidemics are due to cows infected with human types of the streptococcus. Possibly the cow plays the part of the intermediary, its infection being due to a human carrier. In order to avoid such epidemics, all persons suffering from sore throat, amygdalitis, or severe colds, and all carriers of pathogenic streptococci should be prohibited from handling dairy cattle or milk.—*Vet. Med.*

• Lerche, M. Les affections vétérinaires d'origine stréptococcique et leur transmissibilité à l'espece humaine. *Deuts. Med. Wschr.* Abstr. in *Ann de Méd. Vétér.*, 11, p. 491. 1939.

* * * * *

A nine-man civilian committee of food experts was appointed by Secretary of War Patterson last September to investigate charges that the Army wasted food. In its report, just made, the committee charged that the Army overstocked food, wasted it and cooked it poorly. BUT the committee commended the Army for (1) the good quality of the provisions purchased at (2) great economy and (3) for good storage of food. Those are the three points at which the Army veterinary service supervised the food.—*Vet. Med.* (Chicago).

* * * * *

Major G. Miller Mundy, Red Rice, Andover, is the new President of the Shorthorn Society. Its membership now stands at 5,400, compared with 3,000 at the beginning of the last war.

ABSTRACTS

[Chemotherapy of *Erysipelothrix rhusiopathiae* Infections in Mice. WOODBINE, M. (1946.) *Vet. J.* **102**. 88-93.]

This article deals with the effect of certain sulphonamide drugs, and penicillin, on *Ery. rhusiopathiae* both *in vitro* and *in vivo*, the latter tests being carried out in mice. Seven strains of the organism were examined. All were found to be resistant to the action of sulphathiazole, sulphanilylguanidine, phthalylsulphathiazole, 3-sulphanilamidobenzamide and sulphetrone. On the other hand, the same organisms were sensitive to the action of benzylamine-4-sulphonamide and of penicillin. It appears, therefore, that *Ery. rhusiopathiae* does not utilize *p*-aminobenzoic acid as a growth factor, since the two last-named drugs do not owe their inhibitory action to the reversal of *p*-aminobenzoic acid.

The *in vivo* experiments showed that *Ery. rhusiopathiae* infection is not susceptible to the above sulphonamides, when these are given by mouth. Penicillin, if given in large doses intraperitoneally (100 Oxford units morning and evening) gives only temporary protection of a low degree. The course of the disease is more prolonged, but the end result is the same, that is, the great majority of the mice succumb. Heilman & Herrell (1944) have reported that the use of 1,000 Oxford units per day will protect mice from infection, but this must be regarded as an enormous dose.

From the results obtained, it appears unlikely that swine erysipelas will prove readily amenable to penicillin treatment, since the dose required is likely to be very high, and the course of the disease prolonged.

I. W. B.

* * * * *

[Oral Use of Penicillin in Treatment of Experimental *Erysipelothrix rhusiopathiae* in Mice. HARVEY, P. C., LIBBY, R. L., & WALLER, B. B. (1945.) *Proc. Soc. exp. Biol.* **60**. 307-309.]

Test mice were placed in individual cages and given weighed amounts of food containing penicillin suspended in corn oil, or dried penicillin, in varying concentrations per gramme of food. After 24 hours the mice were injected with a lethal amount of test culture, feeding with the penicillin-containing food being continued throughout the experiment. The oil-coated penicillin appeared to be unpalatable, being eaten in small amounts only, and all the mice died within four days of the challenge dose of culture. The food containing dried penicillin in a concentration of 1,000 units per gramme, or more, provided 100 per cent. protection. Other mice were given penicillin in their drinking water. Provision of 1,000 units per c.c. (the average intake by each mouse per day being about 5,000 units) gave complete protection against the challenge injection when begun 24 hours in advance of or at the time of injection. Concentrations lower than 500 units per c.c. were of no value even when given for 48 hours prior to the challenge dose. When the injection of culture was made before the penicillin treatment was started, variable results were obtained. In some instances treatment begun 24 hours after challenge gave almost complete protection, while in others only 20 per cent. of the mice survived. All the mice died if the treatment was delayed until 48 hours after injection.

E. C.

BRITISH VETERINARIANS IN AUSTRIA

"British veterinary experts of Military Government have been helping to deal with outbreaks of cattle diseases in Austria to ensure that as little meat as possible is lost to the country," states the Directorate of Information Services, Control Office for Germany and Austria, and continues: "Reports show that the most widespread disease amongst animals in Austria at the moment is mange. Lower Austria is particularly affected, while some reports have also come from Upper Austria. In all, 2,385 farms have been affected in a total of 968 localities, and in Vienna more than 80 beasts have been treated. There have been small outbreaks of foot-and-mouth disease in Lower Austria and Styria. In Lower Austria, some outbreaks of ulcers amongst horses and cattle have been reported, and there have also been very localized cases of swine fever and infectious paralysis of swine. Some fowl cholera and chicken pest also has been observed in farms in Lower Austria."

* * * * *

WEEKLY WISDOM

". . . our minds need to be kept continuously up to date. If our education stops our minds cease to grow; and since a mind cannot stand still, if it does not grow it dries and withers."—PROFESSOR JOAD.

REPORTS

[Meat. British Society of Animal Production: Reports of the third meeting, February 21st, 1945. General Topic: Meat. Published by the Society, price 2s. 6d. to non-memberrs, on application to the Secretary.]

The British Society of Animal Production is to be congratulated on having the report of its meetings issued in the form of a booklet, giving the papers read as well as the discussion thereupon. The Secretary is Dr. J. E. Nichols, Imperial Bureau of Animal Breeding and Genetics, King's Buildings, West Mains Road, Edinburgh, 9. Under the general title of meat are included papers by Major Warman and Mr. Pomeroy, of the Ministry of Food, on overseas and home supplies, as well as the marketing and distribution of meat and livestock for home consumption, by Mr. J. T. Shaw.

The first paper mentions our dependence upon the importation of meat, and how (at the time the papers were written) we were importing more meat than in pre-war years. The effects of drought on producing countries like Australia and Argentina are mentioned, and the influence of what one may term a more natural method of feeding our livestock here as the result of world shortages of feeding-stuffs. Mr. Shaw makes an effective plea for a more efficient abattoir system in this country, which will be echoed by many who are concerned with the slaughtering of animals.

Dr. Callow, of the Low Temperature Research Station, Cambridge, writes on the Food Value, Quality and Grading of Meat, with special reference to Beef. He shows the changes in the carcases of steers and heifers during fattening, food value in relation to live weight and dressing out percentage, quality and palatability of beef. The work he describes was carried out as part of a programme of the Food Investigation Board in collaboration with the Agricultural Research Council, and is published by permission of the Department of Scientific and Industrial Research. Dr. Callow rightly stresses the importance of improved abattoir hygiene, when writing of bacteria on the surface of meat, and one can thoroughly endorse his remarks, remembering how butchers plaster the meat with their cloth "wipers" soaked in filthy water. (It would be interesting to read the results of an investigation into the bacterial contamination of the surface of beef carcases by slaughtermen.)

Pig Feeding and Management is dealt with by Professor Baskett, of Belfast, who gives some very interesting results of an experiment comparing straight run maize meal and degermed maize meal for fattening pigs, and also oats as a pig food. Mr. Findlay, in the discussion, has something to say about the construction of piggeries, infectious diseases, and how he "frequently felt disappointed with the veterinary surgeons."

The problems of pig breeding are under the masterly care of Dr. John Hammond, Cambridge, who mentions the various suitable pedigree breeds for bacon and pork production. There is mention of such well-known breeds as the Large White and Middle White, with the suitability of the various coloured breeds for crossing to produce commercial pigs, but curiously enough the Large White-Welsh cross for bacon production, with its clean rind and long side, does not appear to have been discussed.

If one may use the expression, this little booklet is crammed with "meat" for anyone interested in livestock. The papers are all written by men who are experts in their subjects, and the discussions comprise the views of many "practical" farmers and breeders. The whole publication is well worth the modest half-crown which the Society charges for it.

D. J. A.

CONSULTANTS FOR U.S. ARMY VETERINARY CORPS

The system of utilizing professional consultants developed by the Surgeon General of the Army during the war and employed by the medical and sanitary corps with conspicuous success, will be continued and extended to include the dental and veterinary corps. Professional consultants will be either commissioned in the Officers Reserve Corps and ordered to active duty as their services may be required or employed in a civilian status. Recommendations for appointment as professional consultant in the dental and veterinary corps will be made by the senior officers in those corps. Professional consultants will not be placed on duty without their consent.—*Vet. Med.* (Chicago).

* * * * *

Because prospective trainees regard blacksmiths' work as "shoeing dirty horses," Hunts. Agricultural Education Committee asks that the words "agricultural engineers" be substituted for "blacksmiths" in its apprentices' scheme.

QUESTIONS IN PARLIAMENT

Colonial Development Council

Mr. Gammans asked the Secretary of State for the Colonies if the new Economic Development Council is to have executive as well as advisory functions; and whether there will be any direct representation on it from the colonial territories.

Mr. Creech Jones: The Development Council will not have executive functions. Nevertheless, it will have important responsibilities to discharge in advising my right hon. Friend in regard to the approval of Colonial development plans and other economic matters. With regard to the second part of the Question, it is not proposed that there should be direct Colonial representation on the Council, but my right hon. Friend hopes to obtain the services on it of some persons with special knowledge and experience of the Colonial territories.

. . . . . .

Colonial House (Suggested Centre)

Mr. Gammans asked the Secretary of State for the Colonies if he is prepared to consider the erection of a Colonial House in London to become a cultural centre for the Colonial Empire.

Mr. Creech Jones: My right hon. Friend is in sympathy with the idea of providing a Colonial House in London and will give it consideration as soon as building and other circumstances permit.

. . . . . .

Horses (Feeding-stuffs)

Mr. Keenan asked the Minister of Agriculture (1) if he will consider reducing the supplies of cereals and hay used to feed racehorses and horses used for hunting and in riding schools, so that additional allowances of feeding-stuffs can be made to farmers for their cattle;

(2) what quantities of cereals and hay, expressed in tons weight, are used for the feeding of racehorses in training, stud farms, hunting and horses and ponies in riding schools in Great Britain in each three months.

Mr. Collick: Of the horses mentioned, only racehorses in training, thoroughbred breeding stock, and horses maintained by hunts for the purpose of the hunt establishments receive an allowance of rationed feeding-stuffs. No rations are allowed for horses in riding schools or horses used by individuals for hunting, and the rations allowed to hunt establishments are limited to sufficient for one-twelfth of the horses maintained by the establishments before the war. It would not be practicable to control the use of hay, which is an unrationed feeding-stuff, and I have no information of the quantity used by the classes of horses mentioned by my hon. Friend. The quarterly issues of rations to the eligible classes during the past year are given below:—

Issues of Rationed Feeding-stuffs (Horsefeed and Bran) for certain classes of Horses in England and Wales, during each period of three months, from July 1st, 1945, to June 30th, 1946.

Period.	*Race-horses in Training.*	*Thorough-bred Breeding Stock.*	*Hunt Establish-ments.*
1945.	Tons.	Tons.	Tons.
July to September	1,359	603	1
October to December ...	1,323	651	147
1946.			
January to March	1,853	975	52
April to June	2,082	964	—
Total	6,617	3,193	200

. . . . . .

Cattle Purchases (Warbled Hides)

Mr. J. Lewis asked the Minister of Food if he is aware that farmers receive the same price from his Department for their animals for slaughtering whether the hide is affected by warble fly or not, thus creating no inducement to them to adopt anti-warble measures; and what is the annual loss to his Department, in view of the fact that hides are sold to tanneries on grade designations, which means that a warbled hide may mean loss to his Department of anything from ¼d. to 2¼d. per lb.

Mr. Strachey: The great majority of cattle are purchased by the Ministry of Food on the basis of their live weight and grade as determined by certifying authorities at collecting centres, and we have not found it practicable to make a distinction between the prices paid for cattle which are affected by the warble fly and for those which are not. The prices charged to the tanners for warbled

hides are lower than those for clear hides. If the hides of all cattle purchased by the Ministry of Food in 1945 had been entirely free from warbles the additional sum realized on sale would have been in the neighbourhood of £130,000.

Foul Brood Disease

Colonel Crosthwaite-Eyre asked the Minister of Agriculture whether, in view of the damage done by foul brood, he will consider amending the Foul Brood Disease of Bees Order (1942) to make it compulsory upon beekeepers to notify this disease.

Mr. T. Williams: The hon. and gallant Member's suggestion has already been carefully considered by the Bee Disease Advisory Committee, which has advised me that, as Foul Brood Disease cannot be definitely recognized by the ordinary beekeeper, it would be impracticable to insist on compulsory notification.

Royal College of Veterinary Surgeons

July Membership Examinations

List of Successful Candidates

(*Continued from page* 315)

Edinburgh

First Year:

Anderson, R. A.
Argo, E.
Ash, R. W. (C)
Bennett, D. G.
Christie, G. (C)
Clegg, F. G. (C)
Coid, C. R.
Davidson, J. B.
Fraser, L. D.
•Gellatly, J. B. M.
•Gittins, J. M.
Hammerton, T. M.
Hardie, H.
Harrison, K. S.
Hay, A. G.
Henderson, G. N.
Hockenhull, E. W. F.
Hooper, R. B.
Jennings, Miss A. H. (C)
Jones, E. J. (C)
•Lancaster, M. C.
MacFadyean, C. A.
†McLaren, L. E.
Madden, D. H. L.
Magowan, J. W.
Murchie, K.
Parkes, W. D. C.
Robson, G. L. (C)
Scoggins, P. G.
Sharp, W. F. (C)
Shortridge, E. H. (C)
Turton, J. D.
Vicary, R. W. G.
Wight, G.

† denotes 1st Class Honours.
• denotes 2nd Class Honours.
(C) denotes credit in Chemistry.

Second Year:

Anstruther, Miss J. D.
Ashworth, G. H. S. (H)
Baker, F. C.
Birrell, Miss E. E.
•Brooks, C. R.
Brown, C. W. (P)
•Burns, K. N.
Chestnut, A. (P)
Cormack, J. G.
•Davidson, I.
•Edgar, D. G.
Ferguson, J.
Finlay, R. A.
Galloway, W.
Geddes, W.
Gibb, A.
Goodhand, R. H.
•Hayes, G. E.
Jones, R.
Macfarlane, D. F.
Malone, G. S. R.
Munro, I. G. (H)
Millar, M. W.
Mitchell, K. S.
Nixon, K.
Pratt, W. (H)
Prescott, J. G. (H)
Reid, G. McL.
Slinger, G.
Stewart, G. H. G.
•Sutherland, Miss C. A.
Taylor, J. B. D.
•Thomson, G. G.
Walker, J. D.
Wilson, W. (P)
Wood, C.
Wright, C.

• denotes 2nd Class Honours.
(P) denotes credit in Physiology, etc.
(H) denotes credit in Histology, etc.

Third Year:

Auchnie, J. A.
Blythman, W. G. (H)
Caird, Miss E. A. Y.
Copland, Miss E. A.
Cowie, J. F. (H)
Curry, G. D.
Fleming, J. A. (H)
Hall, J. H. (A)
Head, K. W. (H)
•Huddart, J. E.
Kay, R. N.
McDonald, J.
Malloch, R. A. H. W. (A) (H)
Millar, Miss M. E. (P) (H)
Moodie, E. W. (A)
Moore, R. E. (A)
•Phillips, J. E.
Preston, Miss A. C.
•Rafferty, G. C.
Rayne, P.
Renton, C. P.
Richardson, S.
•Riddell-Swan, J. M.
Soulsby, E. J. L. (P)
•Stead, P. Y.
Steele-Bodger, A.
Stockdale, H. G. (A)
Tench, A. H. (P)
•Thomlinson, J. R.

• denotes 2nd Class Honours.
(P) denotes credit in Pharmacology, etc.
(A) denotes credit in Anatomy.
(H) denotes credit in Hygiene.

Fourth Year:

Allan, D.
Bottomley, P. J.
Bownass, R. C. (Paras)
Buie, A.
Cameron, J.
Chadwick, I. M.
Colebrook, F.
Coupland, A. M. T.
Donald, L. G.
Duncan, J. M.
Dyce, K. M.
Fletcher, R. B.
Horrox, M. A.
Low, R. J.
Marr, A. (Paras)
Noble, C.
Paterson, J. D.
Robson, J.
Russell, G. H. H.
Strachan, J.
Thomas, P.
Wilson, J. C. (Paras)
•Wilson, J. M.
Wilson, W. J.

• denotes 2nd Class Honours.
(Paras) denotes credit in Parasitology.

Final Year:

Banks, P. N.
Gardiner, R.
•Gledhill, G. G.
Hanscomb, R.
Hetherton, C.
Hezlet, R. K.
Hogg, A.
Jordan, W. J.
Lambert, P. S.
Leach, J. L. R.
Maclean, M. W.
McCartney, W. D. J.
Maneely, R. B.
Mather, D. B.
Olivant, J. M.
Rimmer, S. M.
Scott, G. R.
Townse, G. H. H.
Smith, J. H. C. (M)
•Wilson, J. B.
Young, A. A.

Cembrowicz, H.
Chodkowski, A.
Chodnik, Karol
Ginsberg, A.
Jastrzebski, D.
Rayski, C.
Reichert, M.
Rymaszewski, O.
Uruski, W.

• denotes 2nd Class Honours.
(M) denotes credit in Medicine.

(*To be continued*).

NOTES AND NEWS

Diary of Events

July 31st.—Joint Meeting of the Section of Comparative Medicine, (Royal Society of Medicine) and the Central Veterinary Society, at 1, Wimpole Street, W.1, 5 p.m.

Aug. 2nd—Meeting of the Society of Veterinary Practitioners at Carmarthen (Dolwar Café), 2.30 p.m.

Aug. 7th and 8th.—Summer Meeting of the British Society of Animal Production, at Glasgow. (See Notice.)

Aug. 31st.—Meeting of the Society of Women Veterinary Surgeons at Chester (Queen Hotel), 2.30 p.m.

Sept. 23rd-27th inclusive.—Annual Meeting and Conference of the National Veterinary Medical Association of Great Britain and Ireland, to be held in London.

* * * * *

Penicillin Available Shortly for Use by Veterinary Surgeons in the Treatment of Bovine Mastitis and Other Diseases of Dairy Cattle

By arrangement with the Ministry of Supply and the Ministry of Agriculture and Fisheries, penicillin is shortly to be made available for use by veterinary surgeons in the treatment of bovine mastitis and other diseases of dairy cattle.

Veterinary surgeons wishing to obtain supplies during the period from August 1st, 1946, to October 31st, 1946, should apply to the GENERAL SECRETARY, NATIONAL VETERINARY MEDICAL ASSOCIATION, 36, GORDON SQUARE, LONDON, W.C.1, for the necessary application forms on which they will be asked to state the firm from which they wish to obtain their supplies of penicillin. These firms will, on approval of the application, be appropriately licensed under the Control of Penicillin (No. 1) Order, 1946, to effect supply.

It is gratifying to know that although penicillin cannot be released for all veterinary uses the increase in supplies has

been made possible for its use by veterinary surgeons in the treatment of bovine mastitis and other diseases of dairy cattle.

* * * * *

In a note on the above Order published in its issue of July 20th, *The Pharmaceutical Journal* observes: "It is not proposed to license veterinary surgeons; it is proposed to grant licences to firms which normally are engaged in the distribution of medicinal products to veterinary surgeons, but the veterinary surgeon must make the first move. It appears, therefore, that pharmacists who, without being in possession of such a licence, supply penicillin, or a preparation of penicillin, to a veterinary surgeon render themselves liable to the heavy penalties provided for a breach of the Defence Regulations."

* * * * *

Government of Northern Ireland

Veterinary Inspectors

Members of the profession who may be considering applying for the posts advertised in the lay press are advised to communicate with the General Secretary, N.V.M.A., 36, Gordon Square, London, W.C.1, before doing so.

* * * * *

Report of Ministry of Agriculture Committee on Farm Buildings

The President, N.V.M.A. (Mr. G. N. Gould, M.R.C.V.S.), has accepted an invitation from the Agricultural Improvement Council for England and Wales to serve in a personal capacity as the veterinary member of a "Steering" Committee which is being set up by the Council to prepare a list of matters arising from the above report on which action is needed, to bring each of them to the attention of the appropriate authority, and to follow up these initial approaches in order to ensure that nothing is overlooked.

The membership of the "Steering" Committee is as follows:—

Chairman: Professor Sir Frank Engledow, Draper's Professor of Agriculture, Cambridge University, Agricultural Improvement Council; Mr. W. Blanchard, National Union of Agricultural Workers; Mr. A. Garrard, Agent to the Duchy of Lancaster; Mr. G. N. Gould, President, N.V.M.A.; Lord Portsmouth, Central Landowners' Association; Dr. W. K. Slater, Agricultural Improvement Council, and Mr. J. Turner, President, National Farmers' Union, Agricultural Improvement Council.

The Secretary is Mr. P. J. Moss, of the Ministry of Agriculture.

* * * * *

PERSONAL

Colonial Veterinary Service

The following promotions in the Colonial Veterinary Service (Nigeria) are announced: Mr. H. A. Barclay (Veterinary Officer) to be Senior Veterinary Officer; the following Senior Veterinary Officers to be Assistant Directors of Veterinary Services: Messrs. J. H. B. Best, N. Clarke and R. Coulthard; Mr. S. G. Wilson (Veterinary Officer, Nyasaland) as Senior Veterinary Research Officer, Nigeria. Captain A. E. Dorman is appointed to the Service as Veterinary Officer, Kenya.

* * * * *

Forthcoming Marriages.—Brownlie—Strachan.—The wedding will take place on August 5th, 1946, at the Church of St. Martin's-in-the-Veld, Johannesburg, South Africa, of James Francis Brownlie, M.R.C.V.S., only son of Mr. and Mrs. T. Brownlie, of Glasgow, Scotland, and Captain Fay Mary Helen Strachan, S.A.M.C., youngest daughter of Mr. and Mrs. O. Strachan, of Umtata, Cape Province, South Africa.

Temple—Lancelot.—The engagement is announced between Captain Ronald Richard Temple, Royal Army Veterinary Corps, elder son of the late Mr. A. T. Temple, of Ludlow, Shropshire, and of Mrs. E. S. Temple, of Mill Hill, London, and Mary d'Egville, younger daughter of Mr. and Mrs. R. L. Lancelot, of Mill Hill.

* * * * *

Marriages.— Harrision—Smith.—On Tuesday, July 9th, 1946, at Allestree Parish Church, Peter D. Harrison, M.R.C.V.S., of Stow-on-the-Wold, Glos., to Sheila M. G. Smith, of Allestree, Derbys.

Pugh—Lyle.—The wedding took place at Holy Trinity, Brompton, on July 27th, 1946, between Captain Peter Storie Pugh, M.B.E., M.C., M.A., Royal Veterinary College, son of Major L. P. Pugh, B.Sc., F.R.C.V.S., Sevenoaks, and grandson of the late Mr. David Pugh, F.R.C.V.S., and Alison McGregor, daughter of Captain Oliver Lyle, O.B.E., and Mrs. Lyle, Shorehill, Kemsing, Kent.

* * * * *

R.C.V.S. OBITUARY

Aldred, Henry Herbert, Moorfields, Rowton, Chester. Graduated London, July 12th, 1900. Died July 11th, 1946; aged 67 years.

Gillam, Walter Graham, 2062 East 33rd Avenue, Vancouver, B.C., Canada. Graduated London, December 21st, 1895. Died February 15th, 1946; aged 74 years.

Mr. H. H. Aldred, M.R.C.V.S.

Mr. Aldred, whose death we record above with much regret, went to Chester over 40 years ago, and for many years was in practice in Liverpool Road. About 25 years ago he removed to Littleton Old Hall, but for the last three years carried on his profession at Moorfields, Rowton. Mr. Aldred held the position of Veterinary Inspector (under the Ministry of Agriculture) at the Cattle Market, Chester, and prior to the auction being taken over by the Ministry he served in a similar capacity with Chester Corporation. In the days of horse buses Mr. Aldred used to supply horses for the bus services in Chester. Mr. Aldred is survived by his wife and a widowed daughter, with whom deep sympathy is felt in their loss.

* * * * *

UNIVERSITY COLLEGE OF WALES, ABERYSTWYTH

As announced in our issue of June 15th, there will in future be professorial Chairs of Agriculture (Animal Husbandry) and Agriculture (Crop Husbandry) at Aberystwyth, and Dr. J. E. Nichols, Director of the Imperial Bureau of Animal Breeding and Genetics, Edinburgh, has been appointed to the first. The Chair of Agriculture (Crop Husbandry) has now been filled by the appointment of Dr. W. Ellison, formerly Senior Lecturer in Agricultural Botany at the College.

The creation of these Chairs, together with the existence of the three research departments, will strengthen the already important position of Aberystwyth as a centre for research in agriculture and the related sciences. One of these research Chairs also was filled recently by the appointment of Mr. E. F. Nash, M.A. (Oxon), who has been serving with the Food and Agriculture Branch of the Control Commission in Germany and who succeeds Professor A. W. Ashby, now at Oxford. The Chair of Agricultural Botany, which carries with it Directorship of the Welsh Plant Breeding Station, was filled during the war by the appointment of Dr. T. J. Jenkins to succeed Sir George Stapledon, F.R.S., while the Department of Animal Health came into being last year with the appointment of Mr. Alastair N. Worden, M.A. (Cantab.), M.R.C.V.S., as Milford Professor and Director of Research.

* * * * *

DEPUTATION TO MINISTER ON A VETERINARY COLLEGE FOR WALES

Reporting at a meeting on veterinary training in Wales, held at Cardiff recently, Alderman Joseph Dicks, of the Glamorgan County Council, one of the deputation appointed by the Court of the University of Wales to interview the Minister of Agriculture on the matter, said that Lord Harlech put the case for a veterinary college for Wales, as representing the Principality, Captain Stanley Davies put the case for the Court of the University, and Mr. D. R. Grenfell, for the Welsh Parliamentary Party, said that the party was fully in favour of the scheme and were vigorously "not behind, but of the movement." The President of the National Farmers' Union and the Chairman of the Union's Diseases of Animals Committee also attended.

The Minister had indicated to the deputation that the position so far as Wales was concerned was still open. The Minister had little power at present. That was in the hands of the Council of the Royal College of Veterinary Surgeons who could say who could grant degrees and diplomas. The Minister, however, intended to introduce legislation to give authority to the Privy Council to hear claims.

The Minister, concluded Alderman Dicks, was quite sympathetic to the claims of Wales in the matter. Some concern was felt in the profession lest by increasing the number of entrants their status might be degraded.

Emeritus Professor J. Share Jones (who presided) said that up to the last meeting of the Council of the Royal College no application had been made by the University of Wales.

The Loveday Committee had recommended that two new institutions be established immediately for training veterinary surgeons. They had stated that in any further allocation Wales would have to be considered. The issue before them now was whether Wales was going to be considered in the first allocation. There might never be a second allocation in their lifetime. There had been opposition in the profession on the point of registration, but it had no application at all to the number of institutions.

University Scheme

At a recent meeting of the University of Wales it was decided to recommend to the University Council that, as suggested by the pro-chancellor, Lord Harlech, an *ad hoc* committee be established to draw up a specific scheme for veterinary education by the university.

WYE COLLEGE

The South-Eastern Agricultural College at Wye, Kent, which reopened last June, has now amalgamated with Swanley Horticultural College and will be known by its old name of Wye College. At the first meeting of the new governing body Lord Northbourne was elected Chairman in place of Sir Edward Hardy. In our last issue we announced the appointment by the University of London of Dr. W. R. Wooldridge as its representative on the Board of Governors. Since Mr. Dunstan Skilbeck was appointed Principal last year extensive repairs have been carried out, and the residential facilities are being extended for a full number of ex-Service students from October onwards.

* * * * *

H.M. STATIONERY OFFICE PUBLICATIONS

The undermentioned have been published recently. Copies can be purchased through any bookseller, or directly from H.M. Stationery Office.

	Price net s. d.	*Post free* s. d.
AGRICULTURE AND FISHERIES, MINISTRY OF:		
Agriculture Overseas. Report No. 1. Milk in North America. A Report submitted to the Ministry of Agriculture and Fisheries and the Department of Agriculture for Scotland by the Members of the Milk Mission following their investigation in the United States of America and Canada during May and June, 1945. August 13th, 1945	1 3	1 5

* * * * *

GULLS CRIPPLED BY OIL

The suggestion that the United Nations should try to secure international agreement for the protection of sea birds against oil discharged from ships is contained in a statement issued by the R.S.P.C.A. An inspector of that organization and his wife recently opened a station at Ipswich to clean sea birds crippled by oil thought to be from a sunken tanker. When the birds were taken to the beach at Felixstowe and released, however, they had become so tame that after wading into the sea they rejoined the inspector and his wife, who had to take them back to Ipswich. In a report which the inspector is making to the R.S.P.C.A. he will recommend that cleansing stations can only usefully be set up on the site of an established bird sanctuary.

* * * * *

ADDRESSES OF DISEASE-INFECTED PREMISES

The list given below indicates, first, the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

FOOT-AND-MOUTH DISEASE:

Norfolk.—Clayfield Farm, Boughton, King's Lynn, Norfolk (July 18th).

SWINE FEVER:

Berks.—Smallholding, Kennington Road, Kennington, Berks (July 18th).

Essex.—Claybury Mental Hospital Farm, Tomswood Hill, Ilford, Essex (July 18th).

Worcs.—Balawin House, Honeybourne, Worcester (July 19th).

SHEEP SCAB:

Westmorland.—Littlewater, Bampton, Penrith, Cumberland (July 20th).

* * * * *

"FULL BENEFITS FROM RESEARCH"

In the course of an editorial, headed as above, in its issue of July 16th, *The Farmer and Stock-Breeder* observes: "Co-ordination of research by such a body as the Agricultural Research Council provides a strong team of workers and the necessary equipment to put us on a level footing with overseas countries. It is valuable, too, because it commands sufficient financial control to establish and maintain large-scale and long-range experimental work essential when farm livestock are under observation in place of small laboratory animals. But, however desirable co-ordination of research may be, criticism of the A.R.C. is two-fold. Sir George Stapledon points to the danger that it may be deemed the prerogative of particular institutions, bodies, or groups, to investigate particular problems, and that it may be considered *ultra vires* for other persons to express opinions or to conduct investigations in reserved fields. There develops a tendency to 'star' certain institutions and—by association—certain workers, usually administrative heads. New ideas or discoveries may be taken from bright young workers at smaller institutions and handed over to 'star' centres. More often than not, too, there is delay in the publication of results, due to an excess of 'confidential' directives, and a prohibition on individuals from publishing results till these have undergone a long and delaying bureaucratic round of inspection.

"Another objection has been raised by the Loveday Report on Higher Agricultural Education, in which it is pointed out that research is a necessary complement of teaching, quite apart from the value of its results to the nation. 'Advisers and teachers,' says the report, 'are in their several spheres the channels by which new knowledge bearing on agricultural problems is conveyed to those who can give effect to it in improved practice; they are dependent for that knowledge on the constant prosecution of research. No teaching above the school level can be vivid and inspiring if it is based entirely on lecture notes that the teacher, himself, made as an undergraduate, and on subsequent reading, and is not refreshed by constant search for new knowledge.'

"Clearly a certain amount of centralized and controlled bulk research is desirable to maintain our place in competition with other great primary producing countries. Yet farmers' interests coincide with those of the research workers and of the teachers in requiring that a reasonable proportion of research should be carried out free from direction by Government controlled bodies such as the A.R.C. Greater liberty to prosecute independent research, free from Governmental control, such as that exercised through the A.R.C., would be an encouragement to fresh teaching. It would help to obviate the possible abuse of control operated through the Advisory Service. The A.R.C. is capable of doing great things for British farming; less secrecy on its part would make the Council more popular."

* * * * *

VETERINARY PROBLEMS COMMON TO AFRICA

Dr. P. J. du Toit, Director of Veterinary Services in the Union, supported the proposal made by Dr. B. F. J. Schonland to the Commonwealth Scientific Conference at Oxford that Africa south of the Sahara be regionalized for the purposes of scientific research.

In his paper Dr. du Toit stated that disease knew no boundaries, and for that reason, in approaching the veterinary problems of Africa, scientists must regard the continent as one entity. Many examples could be quoted of diseases spreading across large parts of Africa, completely ignoring the political boundaries, the state of civilization, or the particular form of government through which they passed. There were rinderpest, East Coast fever, horse-sickness, foot-and-mouth disease, and "lumpy skin disease," which was first observed in Northern Rhodesia, and was now in all the southern states.

It would be folly to confine attention to the requirements of one small area, and wasteful of limited resources to allow unnecessary duplication. "It is now suggested that for long range fundamental research on veterinary problems two centres be selected, one in South Africa and the other in Central Africa." Two places which suggested themselves were Onderstepoort in the Union and Kabete in Kenya. Fundamental work in bacteriology could be undertaken at Onderstepoort. He suggested that Onderstepoort, apart from the general study of the properties of viruses, should concentrate on those problems which were of particular interest to South Africa. Kabete might concentrate on those problems of special interest to Central Africa, such as rinderpest, tsetse fly, and nagana.

The concentration of research at a few selected institutes applied to fundamental research only. The applied type of research would still be carried out, and should be encouraged and supported, at smaller research stations like Salisbury, Mazabuka, Mpapwe, and Vom.

* * * * *

THE VETERINARY EDUCATIONAL TRUST

SOMERSET COUNTY COMMITTEE FORMED

"Agriculture is the most important industry in Somerset. Livestock is the most important branch of the industry in Somerset. Disease in livestock can, therefore, justly be described as Public Enemy No. 1 in Somerset." These remarks (says *The Western Daily Press*) were made by Earl Waldegrave when he presided at a lunch held in Wells Town Hall. The chief guest among a company widely representative of the agricultural interest was the Duke of Beaufort, who is Chairman of the Livestock Industry Fund of the Veterinary Educational Trust.

Among those present were the Mayor of Wells (Alderman H. Sealey), Lord Strachie, Lord Hylton, Admiral Sir Hugh Tweedie, Sir R. Hobhouse, Sir Archibald Langman, Mr. F. Rees-Mogg, Sir F. Berryman, Commander Hippisley, Colonel Yatman, Mr. R. G. Mapstone and Mr. W. D. Hay.

Earl Waldegrave also observed that the losses of foodstuffs due to disease in livestock were commonplace knowledge to farmers, but not to the public. The Veterinary Trust was designed to redouble the attack on diseases of animals from all angles. The

veterinary profession was the spearhead of that attack. If they were to press home that attack there must be many gifted men engaged in relevant research. Yet there were no enormous endowments for veterinary training as there were for training concerned with human health.

The Duke of Beaufort expressed his conviction that the future of British agriculture was in livestock. He was keenly hoping that it would not be long before all our herds were attested. Our stock must be of the very highest standards if we were to maintain our export trade in pedigree animals for which this country had always been famous.

Since its activities began in the spring of 1943, the Trust had raised £300,000 on capital account coming in over seven years which had made available a number of research fellowships and undergraduate scholarships. The bloodstock industry was keenly alive to the benefits to be derived from intensive research into its particular problems. The racing fraternity were not slow in knowing when they are on a good thing. He suggested that they, who were concerned with livestock, should do likewise. The target the Trust had set was £1,000,000. Farmers had supported the Red Cross Agricultural Fund handsomely during the war. "I hope we shall now receive similar support for the Veterinary Trust," concluded the Duke.

Dr. W. R. Wooldridge, Scientific Director of the Trust, said, "If research is to be successful it must be independent. Disease in dairy cattle alone costs this country not less than £30,000,000 a year.

"In addition to the present five veterinary research centres, we hope shortly to have two more—one at Cambridge and one at Bristol under the auspices of the University. We know of no other centre which could serve the interests of the South-West so well as Bristol."

Earl Waldegrave was elected first Chairman of the Somerset Committee of the Trust. Mr. Roy Clare, of Wells, was elected first Hon. Secretary. The following were elected foundation members of committee: Sir Reginald Hobhouse, Sir Archibald Langman, Captain D. M. Wills, Major C. M. Roberts, agent to the Duchy of Cornwall, Messrs. S. H. Wear, R. G. Mapstone, F. H. Miles, A. R. Taylor, W. F. Marks, T. W. Hollingworth. A. A. Copland, H. Hosegood, H. Green Austin Sims and W. Middle. Several other influential men are also to be invited. The *ex-officio* help of Captain Fox, the Ministry's veterinary officer, and Mr. W. D. Hay, chief agricultural advisory officer, was also promised.

* * * * *

BRITISH ASSOCIATION "TOKEN MEETING"

President on A New Era or Destruction

At the first meeting held after the war by the British Association, in the British Medical Association's hall on June 20th, Sir Richard Gregory, F.R.S., delivered his presidential address on "Civilization and the Pursuit of Knowledge." The annual meeting in 1939, in Dundee, was ended by the outbreak of war, and the Association will return to Dundee in 1947 for a meeting of the traditional type. Scientists of the Empire and from many foreign countries were at the "token meeting."

Sir Richard Gregory (says *The Times*) traced the development of civilization for the last 10,000 years, and said that among factors which had influenced it science and religion were inseparable.

The discovery of the energy locked in the atom was as natural as the discovery of fire. "But," said Sir Richard Gregory, "there can never be moral sanction for the mass destruction of human life by atom bombs or any other frightful means. . . . It is an offence against the light, for whatever cause it is undertaken. The pursuit of natural or of supernatural truth is the noblest of human endeavours. The use of the knowledge gained has enabled man to penetrate into the centres of stars, but it can carry him down into the pit to perish if his animal instincts continue to prevail over his moral understanding. It is for the leaders of thought and action in the nations of the world now to determine among themselves whether their hearts are strong enough to make the splitting of the hearts of atoms a means of improving conditions of life on the earth and the beginning of a new era, or utterly to destroy what faiths and works have achieved in the history of civilization."

There was now, as always, freedom of choice between good and evil fruits of knowledge, and the ways in which they were cultivated or controlled would be the reply to the menace which faced civilized peoples to-day. All with goodness in their hearts and good will towards their fellows should unite in meeting that challenge to movement onwards and upwards through a religion of humanity.

"Modern humanism takes account of all factors of cultural development, secular or sacred," he said. "It understands clearly that the earth is but a temporary home, not only for the short span of individual life, but also for the whole human race. As tenants or trustees our duty is to make the best use of the resources of our heritage by the exercise of all our talents, and with the belief and hope that by so doing we are contributing to make men godlike if not godly in the sense of religious faith. So may the earth become part of the heavens of the universe, in spirit as it is in truth."

Using a modern medium to illustrate the 1,200,000,000 years' history of life on the earth, Sir Richard Gregory said that in a documentary film of 12 reels, each lasting an hour, and each representing a hundred million years, primitive man would not appear in the panorama until the last minute, and our direct ancestors would make their entry less than a second from the end of the picture.

* * * * *

BURNS TREATED IN PLASTER

"By demonstrating the importance of the capillary damage resulting from a burn, Underhill and his colleagues in 1930 diverted attention from the search for a hypothetical toxin as a cause of the serious systemic reactions following this type of injury," states *The Lancet* in its issue of June 22nd, and continues: "The loss of circulating fluid was enough to account for the grave disturbances arising from extensive burns; and for some years the efficacy of coagulating agents in treatment was believed to reside in their power to arrest the loss of fluid from the burnt surface. It was later realized that the greater part of the fluid lost from the blood went into the skin and subcutaneous tissues. With the object of preventing this, treatment by simple pressure dressings was tried and favourably reported on by Siler & Reid; the same end could be achieved by the use of rigid dressings, such as plaster of paris casts. The reduction in fluid loss from injured capillaries by the immediate application of a cast was clearly demonstrated experimentally by Glenn *et al.* With proper care the arterial circulation to the enclosed limb was not embarrassed, and in dogs it was found that experimental burns that had never been allowed to swell healed more rapidly than untreated controls. Cameron and others have reported similar results with a larger series of goats which were submitted to carefully controlled burns by moderate heat. The application of plaster casts within four hours of burning prevented fluid loss and greatly reduced haemoconcentration in comparison with untreated controls. The general condition of the animals 24 hours after injury was distinctly better in the group treated in plaster casts. In a second series they showed that burns that had been enclosed in plaster healed more rapidly than those treated by simple dressings. Smaller groups were kept in plaster for six, nine, 16 and 30 days, but no differences were noted among these groups in the time taken for complete healing. On the other hand, when the casts were removed within four days of the burn, swelling immediately took place. The explanation of the difference in the rate of healing is almost certainly that far more reparative tissue is needed for those limbs that have been allowed to swell and in which a collection of coagulated exudate has to be organized and disposed of by the surviving tissues. These findings must be applied with reserve to man, particularly because in both goats and dogs bacterial infection does not appear to delay healing significantly. Meanwhile, the possibility that some toxic factor may be generated in the burnt tissues should not be neglected. A dressing that immobilizes the burnt area may also help to prevent the rapid absorption of any such substances liberated into damaged tissues."

* * * * *

BRITISH BEEKEEPERS' ASSOCIATION: RESEARCH COMMITTEE

In a recent issue *Nature* reports that the British Beekeepers' Association, recently reorganized, has now established a series of committees to pursue further the numerous interests of its members. Among these is a research committee the primary function of which is to foster co-operation in research, and to co-ordinate research activities. It seeks also the establishment of a clearing house for information and for the results of contemporary research. The object of bee-keeping is commonly regarded as the production of honey, but the national interest is even better served by the pollinating activities of the foragers, a service which has been reliably valued in Great Britain alone at £4,000,000 a year. At the same time, the craft affords a fascinating hobby for amateurs whose activities, being spread throughout the country, are of greater national importance, for the reason indicated, than are those of the commercial honey producers. The amateur finds not merely a hobby which may be turned to profit, but also an interest in many branches of science. Nevertheless, methods of management are subject to many errors due to tradition and pseudo-science. To deal with such matters, co-operation is essential, because there are so many variables that the individual can seldom conduct an experiment on an adequate scale and is too frequently deceived by an element of chance. Most that is known in the craft has been the result of the enthusiasm of independent observers. The British Beekeepers' Association's Research Committee realizes the importance of amateurs, and is anxious to get into contact with them

whether members of the Association or not. The Committee is also hoping to get into touch with those concerned in researches in other fields which are of interest to beekeepers. Communications should be sent to the chairman of the Research Committee, Mr. E. B. Wedmore, Totease House, Buxted, Sussex.

* * * * *

THE USE OF ELECTRICAL APPLIANCES IN SHRAPNEL DETECTION

The following contribution, by Lieut.-Col. G. V. Short, R.A.V.C., to the May issue of the *Journal* of the Corps, supplements interestingly that by Major Clay published in our issue of May 25th, on the mine detector as an aid to detection of metallic foreign bodies in cattle.

One of the most difficult problems confronting the veterinary officer in the field has been the location of shrapnel fragments in animals. This was formerly possible only by probing the sinus from the wound of entry until the fragment was recognized by metallic touch or sound. Later, a probe was constructed of lead-covered twin cable, the distal ends of which were laid bare for 1/16th of an inch, and the proximal ends connected to a battery and bulb. The malleable lead sheath enabled the probe to follow, more easily than the regulation German-silver probe, the curved and twisted sinuses made by shrapnel fragments glancing from bone surfaces. On contact with the fragment the circuit was completed and the bulb lit. The depth of penetration could then be read from a scale on the lead covering, and after careful extraction of the probe an approximation of the sinus curve was seen. This method was an improvement as far as it went. But it did not solve the difficulty of locating fragments over two feet from their point of entry. Still less did it help to solve the exceptionally difficult problem met with in jungle fighting, namely, the penetration of fragments from tree-bursting grenades, shells and mortar bombs downwards between the scapula and the ribs; beneath the ribs; between the vertebrae of the neck and back; within the pelvis; and deeply embedded in muscle, the tissue of which had subsequently swollen to close the sinus.

It was quickly realized that only a method of detection independent of physical contact could hope to locate fragments so placed. Experiments were made with various electrical appliances, bearing in mind that such aids, to be practicable in field veterinary units, must be independent of a mains current supply, must be light, and easily operated and maintained. The following apparatus and the results obtained are of interest:—

1. *Bergonie's Vibrator.*—Causes the fragment to oscillate by passing an alternating current around a magnetized core. The oscillation can be felt by digital pressure. The vibrator can be activated by a lorry generator coupled to an alternator, but an effective magnet coil was found to be too heavy for general use and, moreover, the vibrator will not react to non-ferrous fragments.

2. *Coil and Galvanometer.*—This is effective only with medium and large fragments at relatively shallow depths and did not give a sufficiently accurate location. It also is useless with non-ferrous fragments.

3. *Polish Mine Detector.*—A battery-activated set comprising a primary and secondary coils, a rectifier, amplifying stages and earphones. Model Nos. 3, 3a and 4 were tried, the last being found to be most suitable and accurate.

With a properly tuned dust-core trimmer and the maximum amplification to the null point, the following results were obtained to a centre of accuracy half an inch in diameter:—

Fragments 1 cm. in diameter.

(i) Eight inches deep in muscle tissue.

(ii) Between the scapula and ribs. Intervening bone has no appreciable screening effect.

(iii) Six inches within the pelvis.

(iv) Within the skull at any depth.

(v) Broken fragments of shoeing nail within the foot in any position and at all depths.

(vi) Broken fragments of hypodermic needle at a depth of two to three inches, depending on the length and bore of the fragment.

As it does not depend on a magnetic principle, this appliance was especially useful in reacting with non-ferrous fragments, bullets, etc. Its accuracy enabled the differentiation of multiple fragments lying close together, as was common with grenades bursting within three yards of an animal.

Extraction of the fragments was effected by surgical incision at right angles to the skin surface at the point indicated by the loudest note in the earphones.

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal views of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

Letters to the Editor should reach the Office not later than by the first post on Monday morning for insertion in following Saturday's issue.

Notice to Correspondents

The Editorial Committee regrets that, the paper supply situation having deteriorated, it has become necessary to ask correspondents again to accept a limitation on the length of letters submitted for publication. Accordingly, contributors to our Correspondence Columns are requested to note that, until further intimation is made, their communications must not exceed 350 words.

* * * * *

AETIOLOGY OF SUMMER MASTITIS

Sir,—I feel sure that many of us would like to have further and fuller information on the causes of the above condition.

The seasonal incidence of the typical case of "summer mastitis" forces one to conclude that there is some extra external factor in operation at the particular time of year in which cases are encountered. The theory that latent infection from calfhood disease or from disease in the organs of reproduction has a close causal connection with this condition of the udder seems to me to be unlikely for, if it had, cases of "summer mastitis" would occur during every part of the year.

The question arises as to where the primary injury occurs (using the word injury in a very wide sense). It would be interesting to watch all the stages of development of this particular disease if such an opportunity were to occur. Have we many records of the pathogenesis of skin inflammations in cattle, especially of inflammations of the skin of the udder? Many of us must have observed inflammatory oedema of the udder, presumably associated with insect bites, but have we been able to follow this condition further and find out its relation, if any, to the well-known "summer mastitis"?

To-night, I examined a heifer with the usual general symptoms, but with painful oedema and swelling of one quarter, accompanied by a thin clear reddish yellow discharge. It was noticeable that there were hundreds of small haemorrhagic punctures in the skin of all the teats and the bare parts of the udder, about half the size of a pin-prick.

Did mastitis develop independently of these small external injuries or was there an extending inflammation inwards from the skin?

Yours faithfully,

Thornhill, Dumfriesshire. A. J. Kennedy.

July 12th, 1946.

DISEASES OF ANIMALS ACTS, 1894 TO 1937, AND AGRICULTURE ACT, 1937 (PART IV).

Summary of Returns of Confirmed Outbreaks of Scheduled (Notifiable) Diseases

Period	Anthrax	Foot-and-mouth	Parasitic Mange*	Sheep Scab	Swine Fever
June 16th to 30th, 1946 ...	2	2	—	2	10
Corresponding period in—					
1945 ...	2	6	—	2	19
1944 ...	4	5	—	2	59
1943 ...	11	—	—	1	24
Total Jan. 1st to June 30th, 1946 ...	51	28	4	36	275
Corresponding period in—					
1945 ...	54	85	5	40	508
1944 ...	111	27	6	61	418
1943 ...	164	10	6	100	258

Note.—The figures for the current year are approximate only.

* Excluding outbreaks in Army Horses.

Tuberculosis (Attested Herds) Schemes

The number of Attested Herds, *i.e.*, herds officially certified as free from Tuberculosis as at June 30th, 1946, was as follows:—

England	Wales	Scotland	Total (Great Britain)
5,966	9,858	6,651	22,475